From "Wetland Program Development Grants (WPDGs) Case Studies"
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Wisconsin Department of Natural Resources (WDNR): *Meeting goals to protect wetland function and health using innovative assessment methods*

Introduction

Wetland acreage in Wisconsin has decreased nearly 50% since its founding as a state, and land-use practices associated with urban development and agricultural activity threaten the remaining 5.3 million acres. Wisconsin Department of Natural Resources (WDNR) has worked hard to counter these threats by fostering better land management practices, developing monitoring tools to assess the remaining wetland resources, initiating restoration activities and educating stakeholders and the general public on the importance of wetlands to the ecosystem. Much of this work has been supported by WPDGs.

In the late 1990's the Department began to expand its vision from reducing the amount of wetland loss to include protecting the condition of existing wetlands and restoring degraded wetlands. The Department recognized the need to develop tools for monitoring wetland biological condition, without undercutting its strong regulatory program. At the same time various stakeholders were asking what the Department's goals were for regulatory protection and restoration. The Department recognized the need to provide a cohesive vision for the disparate parts of the Department with responsibility for various wetland programs.

WPDG Activity

In 1999, Wisconsin DNR was awarded a WPDG that helped to support the formation of a Wetland Team, whose first duty was to develop a strategic vision for wetlands programs in Wisconsin. In December of 2000 the Wetland Team produced *Reversing the Loss – A Strategy for Protecting and Restoring Wetlands in Wisconsin*. The Strategy charts a course for WDNR programs involved in wetland education, protection, restoration, enhancement and management. It serves as guidance for current and future wetland-related policy and program directions and seeks to fit existing programs and future policies into a cohesive scheme with common goals. The Strategy set nine goal areas with specific performance measures to be accomplished over a six-year period from 2001-2006. For example, one goal was to "Strengthen relationships with wetland owners, nonprofits and local governments." Performance measures for Outreach and Education were outlined and several goals have been met over the last six years.

WDNR, in partnership with federal conservation agencies and non-profit organizations such as the Wisconsin Wetlands Association and Wisconsin Waterfowl Association, has published ***Reversing the Loss*****;** developed a wetland Website with general information on wetland news, the Strategy, wetland functional values, wetland protection, wetland permits, inventory, restoration and management, publications and important links; assisted in the publication of the first and second editions of ***Wetland Restoration***

Handbook for Wisconsin Landowners*;** and used the ***Restoration Handbook in conducting hands-on workshops for consultants, agency practitioners and private property owners interested in restoring wetlands, with over 600 workshop attendees thus far.

Along the same lines of the example outlined above, ***Reversing the Loss*** set goals that were more ambitious than "No Net Loss." The Wetland Team recognized the need to focus attention on wetland quality as well as quantity and to make decisions on the basis of the ecological roles wetlands play in the overall health of the Wisconsin landscape. Another major goal of the Strategy was to use modern technology to map, monitor, protect and manage wetlands. Efforts were focused on developing monitoring methods that the Department and its wetland partners could use to assess the biological integrity and overall health of wetlands. Three new monitoring and assessment tools were developed with grant funding:

- A multi-metric ***Index of Ecological Integrity for Isolated Depressional Wetlands*** based on research-derived metrics for plants, macroinvertebrates, diatoms, amphibians and zooplankton. The research is described in ***Refinement and Expansion of Wetland Biological Indices for Wisconsin*** published in April 2002.

- A ***Wisconsin Floristic Quality Assessment*** methodology based on expert opinion and simple equations to derive a mean coefficient of conservatism (i.e. how likely the plant is to be found in an undisturbed natural area vs. a weedy, disturbed habitat) and a floristic (plant) quality index for a site. The grant funded the gathering and facilitation of Wisconsin botanical experts to assign coefficients to over 1700 recognized vascular plant species native to Wisconsin and to develop a computer program for employing the method. This method is described in ***Development of a Floristic Quality Assessment Methodology for Wisconsin*** published in June 2003.

- A coarse landscape-scale method using computer-based classification of remote sensing imagery to map Wisconsin's most problematic wetland invasive plant species. This method maps wetlands that are heavily dominated by reed canary grass, *Phalaris arundinacea* at a ½ acre minimum mapping unit. The project documented 102,868 acres of existing wetlands dominated by reed canary grass, 14% of the total wetland acreage in the pilot area. The methodology and results of a pilot feasibility study are described in ***Using Landsat 7 Imagery to Map Invasive Reed Canary Grass (Phalaris arundinacea): A Landscape Level Monitoring Methodology*** published in March of 2004.

Supported by subsequent WPDGs, these methods have been tested and are being used in current wetland assessment projects at both the site scale and the watershed scale. The Wisconsin Floristic Quality Assessment method has been used to evaluate relative wetland condition in several regulatory contexts and is likely to be used in future monitoring efforts. The third method, mapping reed canary grass near-monocultures, will be employed across the entire state.

Current Work and Future Plans

The landscape method for identifying wetlands dominated by invasive species is currently being used as part of a WPDG project in the Milwaukee River Basin to identify wetlands in need of rehabilitation. WDNR anticipates that future restoration projects will be started as a result of the Milwaukee River project. Additional support for research into the control of reed canary grass has benefited from the quantification of its impact and distribution across ecological land types. A follow-up project evaluating one promising method of control is currently under way.

Please visit the Wisconsin Department of Natural Resources wetlands website (http://dnr.wi.gov/org/water/fhp/wetlands/index.shtml) for more information about Wisconsin's wetland resources and for links to the various wetland documents published by WDNR.

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